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MSHT20 - Inclusion of Theoretical Uncertainties and Higher Order Effects into PDFs

Monday 31 October 2022 16:10 (15 minutes)

I will discuss our recent paper within the MSHT PDF collaboration on the inclusion of theoretical uncertainties and higher order (N3LO) terms into the MSHT PDFs, producing the MSHT20aN3LO (approximate N3LO) set. This represents the first global analysis of parton distribution functions (PDFs) at approximate N3LO as well as the first inclusion of theoretical uncertainties from missing higher orders beyond NNLO. I will review the formalism, higher orders and theoretical uncertainties included, and their effects on both the fit quality and PDFs before examining indicative N3LO predictions.

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